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**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

ECOFACTOR, INC.,		Civil Action No. 6:20-cv-00075 (ADA)
	Plaintiff,	
v.		████████████
GOOGLE LLC,		
	Defendant.	

GOOGLE LLC'S RULE 50(B) MOTION FOR JUDGMENT AS A MATTER OF LAW[1]

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[1] Under Fed. R. Civ. P. 59, Google is concurrently filing a motion for a new trial on damages.

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I.   INTRODUCTION

Google respectfully moves under Federal Rule of Civil Procedure 50(b) for judgment as a matter of law ("JMOL") of no infringement and invalidity of claim 5 of the U.S. Patent Nos. 8,738,327 ("the '327") and invalidity of claims 2 and 12 of the 10,534,382 ("the '382"). Google brings this renewed motion for JMOL for the reasons explained in its Rule 50(a) motion for judgment as a matter of law, ECF 203, filed at the close of evidence. JMOL of no infringement is appropriate because EcoFactor failed to present evidence, such that the jury had no legally sufficient basis to find, that the accused Nest products infringe. *See* Fed. R. Civ. P. 50(a)(1). Further, JMOL of invalidity is appropriate because Google presented clear and convincing, and indeed, unrebutted evidence that claim 5 of the '327 was anticipated by or obvious over Ehlers[2] and that claims 2 and 12 of the '382 were anticipated by Rhee.[3] Google also proved by clear and convincing and unrebutted evidence that the asserted claims are directed to patent-ineligible subject matter.

II.   LEGAL STANDARD

JMOL is required when "[there is no] legally sufficient evidentiary basis [for a reasonable jury] to find for the [non-moving] party on that issue."[4] Fed. R. Civ. P. 50(a). Conclusory expert testimony does not constitute substantial evidence on which a jury verdict may be based. *See VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1333 (Fed. Cir. 2014) (applying Fifth Circuit law). Even if the jury's findings are supported by substantial evidence,

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[2] "Ehlers" refers to U.S. Pat. App. No. 2004/0117330, DTX-0219, published on June 17, 2004, naming Gregory A. Ehlers as the first inventor.

[3] "Rhee" refers to U.S. Pat. App. No. 2009/0302994, DTX-0224, published on December 10, 2009, naming Sokwoo Rhee as the first inventor.

[4] In quoted excerpts throughout, all emphases have been added unless otherwise noted.

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JMOL is still warranted if "the legal conclusions implied from the jury's verdict cannot in law be supported by those findings." *Kearns v. Chrysler Corp.*, 32 F.3d 1541, 1547-48 (Fed. Cir. 1994).

III.   THE COURT SHOULD GRANT JMOL OF NO INFRINGEMENT FOR THE '327.

To establish infringement of any given claim, EcoFactor must prove that every limitation of the claim is met by an Accused Product.[5] *Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985). But at trial, EcoFactor failed to present evidence sufficient to support the jury's verdict of infringement of claim 5 of the '327—specifically, how the Accused Products satisfy the limitation requiring that the thermostats "receive[] temperature measurements from inside the structure . . . conditioned by [an] HVAC system." '327 (JX-0002), at 9:29-32 (claim 1, from which asserted claim 5 depends). On the contrary, the evidence showed that, rather than receive inside temperature measurements of the HVAC-conditioned structure, the Accused Products ██ .

A. The evidence showed the Accused Products do not measure, ████████████ ████████ , inside temperature and thus do not literally infringe '327 claim 5.

The claim language itself distinguishes between receiving "measurements" ('327 at 9:29-32) from inside the HVAC-conditioned structure and "deriv[ing] an estimation" (*id.* at 9:43-44).[6] Thus, according to the plain language of different limitations within the same claim, receiving measurements (limitation 1[a]) differs from deriving an estimation (limitation 1[c]). *See Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) ("Our

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[5] The Accused Products are Nest Learning Thermostat Third Generation, Nest Thermostat E, and the Nest Thermostat.

[6] Google previously proposed to construe "temperature measurements from inside the structure" to mean "determination [of the inside temperature] by an instrument by using standardized units," but the Court instead gave this term its plain and ordinary meaning. *See* Decl of Washington i/s/o Google's Rule 50(b) and Rule 59 Motions, Ex. 2. The Court has yet to issue final claim-construction rulings but instructed the parties to jointly memorialize their understanding of the Court's claim constructions. *See* ECF 186 at 2.

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precedent instructs that different claim terms are presumed to have different meanings.");

compare '327 at 1:34-42, 6:13-16 (disclosures of how thermostats measure temperature), *with id.*

at 3:31-37, 7:51-55 (disclosures of how calculated estimates or predictions are derived).

The evidence presented at trial showed that, contrary to the plain language of '327 claim

5, the Accused Products ███

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██ *See, e.g.*, DTX-0665 at 19-22; Trial Tr. at

759:7-16, 759:24-760:8, 762:17-763:5 (Dr. Burger discussing the Accused Products); 956:1-11

(Dr. Turnbull). ██

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███ . *See* DTX-0665 at 19-22; PTX-0315

at 6; Trial Tr. 460:19-24, 462:2-7 (Mr. de la Iglesia); 759:1-6, 763:8-24, 764:12-765:22 (Dr.

Burger); 695:19-696:5 (Mr. McGaraghan); *see also* 956:22-957:5 (Dr. Turnbull).

EcoFactor did not dispute that the evidence showed that the Accused Products ██████

███████████████████████████ . *See* Trial Tr. 320:15-17, 324:11-14 (Mr. de la Iglesia). Nor

did EcoFactor present any fact testimony to meet its burden to prove how the Accused Products

meet the claim limitation of receiving inside temperature measurements of the HVAC-

conditioned structure. Instead, EcoFactor relied only on the testimony of its paid expert and

public-facing webpages meant to convey high-level, non-technical information about the

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Accused Products to consumers. *See, e.g.*, PTX-0929 at 7 (Google Nest Help website discussing temperature sensors in all Nest products, not just the accused products); Trial Tr. 319:3-14 (Mr. de la Iglesia). But as Google's witnesses testified, these public-facing webpages were intended to provide users "a high-level view" of the product features, not engineering design specifications. Trial Tr. 1299:6-1300:2 (Ms. Desai); *see also id.* 791:19-792:3 (Dr. Burger was unaware of public-facing documents explaining how ██████████ works).

The Accused Products' ██████████████████████████████████████

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███████████████████████. Trial Tr. 697:9-12 (Mr. McGaraghan); 759:1-6, 762:7-25 (Dr. Burger); 955:23-956:21 (Dr. Turnbull); 1291:6-10, 1295:2-1296:1 (Ms. Desai). This choice of prioritizing "industrial design" of the Accused Products—made by former Apple executives who designed the iPod and iPhone before founding Nest, *see* Trial Tr. 693:13-21 (Mr. McGaraghan)—presented the Nest engineering team with quite a challenge. Rather than being able to use sensors to measure room temperature like other thermostats, the Nest engineers ████

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███████████████████████████████████. Trial Tr. 768:1-769:22 (Dr. Burger).

In the face of all of the above evidence, the jury lacked a substantial basis to find that EcoFactor met its burden to prove that the Accused Products satisfy all the limitations of '327 claim 5. EcoFactor, however, improperly equated the different terms "measurement" and "estimation" to procure the jury's finding of infringement. EcoFactor's expert repeatedly and improperly synonymized these terms in his characterization of the claim and the operation of the

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Accused Products. *See* Trial Tr. 461:9-10 (Mr. de la Iglesia testifying, "████████████

█████████████████████████."), 461:3-5 ("█████████████████████

██."). He also

repeatedly used the word "measurement" when a person of ordinary skill in the art applying the

plain meaning of the term would instead use "estimate." *See* Trial Tr. 325:9-12 (testifying that

the Accused Products' ████████████████████████████████████

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████████████████████████████"), 325:22-24 ("And what this is

describing is that the █████████████████████████████████

██████████████████████████████████████"), 326:7-9 (these

are known mathematical methods to generate ███████████████████

████████████████████████"), 326:17-19 (a "██████████████

████████████████████████"). Had EcoFactor faithfully heeded the claim language, the

jury would have been required to find that the Accused Products do not "measure" the inside

temperature of the HVAC-conditioned structure and that the ████████████████████

███████████████████ do not satisfy the "receiv[ing] temperature measurements"

limitation of claim 5. *See Network-1 Technologies, Inc. v. Hewlett-Packard Co.*, 981 F.3d 1015,

1022 (Fed. Cir. 2020). Thus, the Court should grant JMOL of no infringement.

B. No substantial evidence supports infringement of '327 claim 5 under the doctrine of equivalents.

EcoFactor's infringement argument under the doctrine of equivalents likewise rested on

its improper equating of "measurement" with "estimate." EcoFactor's expert urged the jury to

find that the doctrine of equivalents was satisfied because "there [was] no material difference

between . . . what is in the claim and what is actually performing it." Trial Tr. 327:9-11. By

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improperly ignoring the difference between the plain meanings of the two terms, EcoFactor's

expert encouraged the jury to make an erroneous finding under the doctrine of equivalents. As a

result, the Court should set aside the jury's verdict and find noninfringement as a matter of law.

Even setting aside the claim construction issue, EcoFactor's expert provided only

conclusory statements on alleged infringement under the doctrine of equivalents. *See* Trial Tr.

329:15-17 (testifying that his "conclusion was that they meet this requirement literally but also

under the Doctrine of Equivalents."); 331:22-25 ("Even if somebody said that it wasn't in

exactly the same way but it's – it would be, you know, immaterially different, it would still

infringe under the Doctrine of Equivalents."); 483:25-484:1 ("And even under Doctrine of

Equivalents, the test – it would be more than satisfied."). His conclusory testimony cannot

overcome the evidence from Google's engineers that █████████████████████████

████ is substantially different from the claim limitation requiring the measurement of room

temperature by sensors. For example, solving the challenge created by the Nest thermostats'

█████████████ required substantial and sustained effort by a team of engineers, led by Dr. Eric

Burger, to develop █████ for each accused thermostat. *Id.* at 765:23-766:6, 770:22-778:5 (Dr.

Burger); 967:10-15 (Dr. Turnbull). Nest's solution was therefore not merely an insubstantially

different way to arrive at inside temperature but a distinct method of █████████████ rather

than measuring temperatures. Thus, the Court should enter JMOL of no infringement.

IV.   THE COURT SHOULD GRANT JMOL OF INVALIDITY FOR THE '327.

A. Google presented unrebutted and clear and convincing evidence that claim 5 was invalid in light of the Ehlers reference.

Given the evidence presented at trial, a reasonable jury could only conclude that claim 5

of the '327 is either anticipated by Ehlers's prior invention or made obvious by Ehlers

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considering the knowledge of a person of skill in the art ("POSITA").[7] Google's expert, David Williams, marched methodically through every element of the asserted claim 5 and of independent claim 1, from which claim 5 depends, pointing to exactly where each element could be found in Ehlers. In response, EcoFactor addressed only three elements on cross-examination and spent only 15 minutes on its rebuttal expert's entire direct, with neither examination providing evidence to rebut that '327 claim 5 is invalid over Ehlers.

1.   Mr. Williams explained why each element of claim 5 was present.

The '327 generally describes a system and method to verify compliance with energy demand reduction programs and to use indoor and outdoor temperatures to calculate the rate of change of inside temperature in response to the outside temperature. *See* JX-0002 at Figs. 6A, 7, 8, 3:19-21; 9:26-54. Mr. Williams explained that, like asserted claim 5 of the '327, Ehlers teaches a system for monitoring and controlling energy consumption by using devices like computers and servers and also by using predictive models. *See* Trial Tr. 1193:3-8; DTX-0219 at Figs. 1B, 3D, 3E. He explained that Ehlers disclosed all of the same elements as claimed in the '327, including a thermostat connected to an HVAC system and in communication with one or more servers via a network. *See* Trial Tr. 1193:9-22 (describing Ehlers Fig. 1B). For '327 claims 1 and 5, Google, through Mr. Williams, conclusively proved the following:

- **[1pre]:** As EcoFactor did not contest, Ehlers discloses a system that controls the operational status of an HVAC system. *See, e.g.*, Trial Tr. 1195:1-7; DTX-0219 at ¶¶ 90, 92.

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[7] EcoFactor did not dispute that Ehlers is prior art. *See* Trial Tr. 1192:2-15 (Mr. Williams discussing Ehlers as prior art); *id.* at 1311:15-1313:14 (EcoFactor's rebuttal expert, Dr. Palmer, discussing Ehlers without questioning its status as prior art); DTX-0219; JX-0002.

- **[1a]:** As EcoFactor did not contest, Ehlers discloses a system that can sense the current indoor temperature. *See, e.g.*, Trial Tr. 1195:8-1196:2; DTX-0219 at ¶ 88, Fig. 3B. Ehlers also discloses that the managed systems may include one or more HVAC systems that include one or more setpoints. *See, e.g.*, Trial Tr. 1196:3-21; DTX-0219 at ¶ 116.

- **[1b]:** Ehlers discloses every element of claim limitation [1b]. Trial Tr. 1199:14-16. Ehlers discloses "one or more servers," including (1) a "backend" server located away from the structure that has an always-on, secure connection to (2) a gateway, a server that stores data and manages other devices, like thermostats. *See, e.g.*, Trial Tr. 1196:22-1199:16; DTX-0219 at ¶ 268, Fig. 1B. These servers are "located remotely from the structure," as the gateway node can be part of a network that includes a group of homes and is thus remote from them. *See, e.g.*, Trial Tr. 1196:22-1198:13; DTX-0219 at ¶ 202, Fig. 1B. And the back-end server, operating more conventionally behind the scenes, can also be remote. Trial Tr. 1198:14-22; DTX-0219 at Fig. 1B. Ehlers also discloses that the thermostat can get external weather information through the gateway, including the local weather forecast, which would contain measurements of outside temperatures. *See, e.g.*, Trial Tr. 1198:23-1199:13; DTX-0219 at ¶¶ 230, 293.

- **[1c]:** Ehlers discloses that the thermostat, gateway node, and back-end server communicate with each other via a network. *See, e.g.*, Trial Tr. 1199:17-1200:12; DTX-0219 at Fig. 1B. Ehlers also discloses that the gateway node can query the current temperature and setpoint values of the thermostat. *See, e.g.*, Trial Tr. 1200:14-24; DTX-0219 at ¶ 150, Fig. 1B.

Ehlers further discloses a rate of change in the inside temperature of the structure in response to the outside temperature. *See* Trial Tr. 1201:1-1207:6; DTX-0219 at ¶ 253, Fig. 3D. In particular, Fig. 3D shows how the system in Ehlers tracks and learns data about the thermal gain characteristics of a home (i.e., change in inside temperature caused by outside temperature)

by tracking the thermal gain rate over time given specific temperature setpoints. *See id.* Fig. 3D

discloses data about a setpoint temperature of 72°F (inside temperature), and three corresponding

lines (3.12A, 3.12B, 3.12C) that depict the change in the inside temperature of the home at three

different outside temperatures: 99°F as shown by line 3.12A; 90°F as shown by 3.12B; and 77°F

as shown by 3.12C. *See id.* The rate of change in inside temperature in response to outside

temperature over time is depicted by the slopes of Fig. 3D's three lines. *See id.*

- **[1d]:** As EcoFactor did not contest, Ehlers discloses that a utility company may

monitor and control home electricity usage through the various devices described in Ehlers,

including through one or more Power Supply Programs, which seek to reduce energy demand

during peak periods. *See* Trial Tr. 1207:8-1209:24; DTX-0219 at ¶¶ 78, 104, 135, 136, Fig. 1B.

Ehlers discloses that these demand reduction requests—which were not novel as Ehlers

acknowledges—are tracked, recorded, stored, and associated with particular homes. *See, e.g., id.*

- **[1e]:** As EcoFactor did not contest, Ehlers discloses sending a demand reduction

request to a specific structure to reduce electricity demand, where the "second setting" from the

asserted claim refers to a setting higher in summer or lower in winter to reduce electricity

demand. *See, e.g.,* Trial Tr. 1209:25-1211:4; DTX-0219 at ¶¶ 138, 141.

- **[5]:** Ehlers discloses a system using learned thermal gain characteristics to calculate

an offset needed to maintain a specific HVAC runtime. Thus, as in claim 5, Ehlers discloses

using an estimated thermal gain (i.e., rate of change in inside temperature) to predict how inside

temperature will change in response to outside temperature and using that prediction to control

the future HVAC system usage. *See, e.g.,* Trial Tr. 1211:5-1214:15; DTX-0219 at ¶ 256, Fig. 3E.

Given the uncontested evidence above, Google proved by clear and convincing evidence

that Ehlers anticipates, and thus renders invalid, claim 5 of the '327.

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2. EcoFactor did not meaningfully contest the presence of these elements.

After Google's case, EcoFactor spent only two minutes putting on testimony from its

rebuttal expert, John Palmer, to attempt to rebut Mr. Williams's testimony on Ehlers. *See* Trial

Tr. 1311:15-1313:14 (Dr. Palmer). During his brief time on this topic, Dr. Palmer only testified

about three claim limitations: 1[b], 1[c], and claim 5's requirement that the estimated rate of

change is a prediction of the future rate of change. *See id.* Given the brevity of his testimony, Dr.

Palmer offered only *ipse dixit* testimony in response to Mr. Williams on these three limitations

while providing no supporting evidence on which the jury could reasonably rely to rebut Mr.

Williams's opinions. *See VirnetX*, 767 F.3d at 1333 ("conclusory assertions cannot form the

basis of a jury's verdict"); *MobileMedia Ideas LLC v. Apple Inc.*, 780 F.3d 1159, 1172 (Fed. Cir.

2015) ("Conclusory statements by an expert . . . are insufficient to sustain a jury's verdict").[8]

3. Google presented unrebutted testimony that claim 5 was obvious over Ehlers considering the knowledge of a POSITA.

Along with presenting evidence that Ehlers disclosed all elements of and thus anticipated

claim 5, Google presented unrebutted testimony that even if all of those elements were not

explicitly present, they would have been obvious to a POSITA. *See* Trial Tr. 1214:24-1215:19

(Mr. Williams). Mr. Williams testified that even if Ehlers, like the '327, does not actually

disclose a formula for how to "derive an estimation for the rate of change," based on how a

POSITA would understand the plain and ordinary meaning of that term, a POSITA could derive

the formula from Figures 3D and 3E of Ehlers. *See id.* 1201:1-16. Dr. Palmer himself confirmed

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[8] On direct examination and again on cross, Dr. Palmer even admitted that the opinions in his
report and recounted in his trial testimony were not his own but were drafted by EcoFactor's
lawyers. *See* Trial Tr. 1309:6-15; 1316:4-7 (70-80% of his expert report was provided to him by
EcoFactor's attorneys); 1317:15-24 (the only sections of his report he authored in the first
instance were his credentials and background section).

this on cross-examination. *See id.* 1319:2-6 (Dr. Palmer testifying that he understood how

Ehlers' disclosed thermal gain rate could mean the amount of temperature gain over time as

explained by Mr. Williams). EcoFactor presented no contrary evidence.

In sum, the jury's finding that claim 5 is not invalid is not supported by substantial

evidence, and therefore JMOL of invalidity is appropriate.

B. Google presented unrebutted and clear and convincing evidence that claim 5 is invalid under Section 101.

Google moved for summary judgment that claim 5 of the '327 is invalid under Section

101, which the Court denied at the pretrial conference, and submitted the second part of the *Alice*

test to the jury. *See* ECF 111; Pretrial Tr., 31:17-19. The Court should set aside the jury's verdict

and enter JMOL under Section 101 because the elements of claim 5, when taken individually and

as an ordered combination, were well-understood, routine, and conventional.

1. As shown in Google's motion for summary judgment, the claims of the '327 are directed to an abstract idea.

For the reasons explained in Google's summary judgment motion, this Court should find

that claim 5 is directed to the abstract idea of changing a thermostat setting in response to a

request to reduce energy usage under *Alice* step one. *See* ECF 111 at 14-16. Claim 1 recites a

sequence of basic functions: (1) receive a request from a utility to reduce energy usage, (2)

determine whether the recipient participates in the demand reduction program, and (3) if so,

respond to the request by sending a signal to change the thermostat setting. Claim 5 only adds an

ancillary prediction of the rate of change in the inside temperature. But all essential functions of

the claim can be performed by the human mind and need not rely on any computations or

calculations at all. These claimed functions, coupling a thermostat with a computer network to

receive and verify demand reduction requests, are patent ineligible just like those in the claims

invalidated in *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 768 (Fed. Cir. 2019).

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Neither claim 5 nor the specification of the '327 defines any technological improvements upon the recited, generic hardware components, but merely recites the functions they must carry out. For example, even in its "Detailed Description of Preferred Embodiments," the specification discloses generic, routine, and/or well-known technology, including: the "World Wide Web," "local area networks," "conventional computers," "general-purpose processors," "handheld and wireless devices such as . . . cellular telephones," and "random access memory . . . or other method of storing data." JX-0002 at 4:43-44, 5:1-53.

As learned from named inventor Scott Hublou, the lack of improvement to hardware components was by design—the inventors hoped, in fact, that the invention would be "hardware agnostic." Trial Tr. 254:8-20 (Mr. Hublou). Rather than seeking to create new hardware, the '327's purported invention was "about the data and the data manipulation." *Id.* 254:22-24. The inventors used an off-the-shelf, Ethernet-connected thermostat (by Prolifics), which generated the data they "wanted to be able to extract" to test their purported invention. *Id.* 255:5-10.

Mr. Williams confirmed Mr. Hublou's testimony that all of the hardware components contemplated by the '327 were conventional. *See* Trial Tr. 1237:15-1238:19 (Mr. Williams quoting the '327 specification's disclosure of "conventional" and "well known" components). He also testified that the patent used these conventional components in a well-understood and routine way, "either individually" or "collectively . . . in combination," without reciting any improvements to what was already known in the state of the art. *Id.* at 1240:12-25.

As with Google's other invalidity evidence, EcoFactor's rebuttal expert, Dr. Palmer did not meaningfully contest the conventionality of the components or the functions in claim 5 in the two minutes of his direct examination that EcoFactor devoted to this topic during direct examination. While Dr. Palmer stated his belief that the arrangement of the individual

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components in claim 5 was not conventional, he never explained why this was so. *See* Trial Tr. 1313:22-1314:15. He only parroted Mr. Hublou's assertion that a "wireless connected thermostat was not available at the time of the invention of the patent" and that the inventor "met with a significant degree of skepticism when he went to a university to seek their assistance in developing a commercializable form of the patent." *Id.* at 1315:5-11. But as Mr. Hublou testified, a wireless connected thermostat was not required to carry out the claimed functions, and whether the inventors could successfully commercialize their purported invention is a separate question from whether the purported invention consisted of conventional components arranged in a conventional way. *See* Trial Tr. 255:5-10 (inventors used Prolifics' thermostat for testing).

2. The jury's finding that claim 5 was not well-understood, routine, and conventional is not supported by substantial evidence.

For *Alice* step two, EcoFactor did not dispute that the claimed hardware components were well known at the time of the purported invention. *See* § IV.B.1 *supra*. Claim 5 also uses those components in a conventional way, merely to "extract [] data," according to Mr. Hublou. Trial Tr. 255:5-10. By the patent's own admission, claim 5 also recites the familiar concepts of receiving a demand reduction request from a utility and reacting to such a request. *See, e.g.*, JX-0002 at 2:15-3:17; Trial Tr. 1208:6-24 (Mr. Williams explaining how Ehlers teaches a system for demand reduction requests in 2004, four years before the application for the '327); 1240:12-20 (nothing new in claim 5 in terms of components or steps they carry out). As a result, claim 5 fails to provide the necessary inventive concept.

Claim 5 also recites only an aspirational result, relying on generic servers "configured" to receive a demand reduction request, determine whether the structure participates in a demand reduction program, and then send a signal to the thermostat to change the HVAC setting if so.

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Nothing in the claim defines how to do any of this is to be done, and so the claim is not inventive. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1244 (Fed. Cir. 2016) (finding that a "claim that merely describes an 'effect or result dissociated from any method by which [it] is accomplished' is not directed to patent-eligible subject matter").

Accordingly, the Court should enter JMOL of invalidity of '327 claim 5 under Sections 101, 102, and/or 103.

V.   THE COURT SHOULD GRANT JMOL OF INVALIDITY FOR THE '382 PATENT.

A.   Google presented unrebutted and clear and convincing evidence that '382 claims 2 and 12 were invalid in light of the Rhee reference.

Given the evidence presented at trial, a reasonable jury could only conclude that claims 2 and 12 of the '382 were anticipated by Rhee. Google presented evidence that every element of claims 2 and 12 was present in Rhee.[9] As with the '327, Mr. Williams marched methodically through every element of the asserted claims 2 and 12 and of claim 1, from which those claims depend, explaining where each element was present in Rhee. Neither on cross-examination nor during Dr. Palmer's direct did EcoFactor provide any evidence to rebut that Rhee anticipated claims 2 and 12 of the '382.

1.   Mr. Williams explained why each element of claims 2 and 12 was present.

Like the '382, Rhee teaches a system for monitoring and controlling the energy consumption of structures using an occupancy sensor. *See, e.g.*, Trial Tr. 1216:23-1217:8; JX-0003; DTX-0224. For claims 2 and 12 and claim 1 from which they depend, Google, through Mr. Williams, conclusively demonstrated the following:

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[9] EcoFactor did not dispute that Rhee is prior art. *See* Trial Tr. 1216:2-19 (Mr. Williams describing Rhee as prior art to the '382); 1309:19-1311:14 (Dr. Palmer discussing Rhee without questioning its status as prior art); DTX-0224; JX-0003.

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- **[1pre]:** As EcoFactor did not contest, Rhee discloses a system for controlling an HVAC system, such as a building energy management system. *See, e.g.*, Trial Tr. 1217:9-20 (Mr. Williams); DTX-0224 at ¶¶ 49, 52.

- **[1a]:** As EcoFactor did not contest, Rhee discloses a storage module that functions as a memory. *See, e.g.*, Trial Tr. 1217:21-1218:4 (Mr. Williams); DTX-0224 at ¶ 60.

- **[1b]:** As EcoFactor did not contest, Rhee discloses a wireless controller that includes programmable processors that manage, control, direct, or monitor energy devices like heaters and air conditioners. *See, e.g.*, Trial Tr. 1218:5-25 (Mr. Williams); DTX-0224 at ¶¶ 45, 46, 106.

- **[1c]:** As EcoFactor did not contest, Rhee discloses that the processors of the wireless controller receive data, including energy data, from at least one sensor. *See, e.g.*, Trial Tr. 1219:1-1221:1 (Mr. Williams); DTX-0224 at ¶¶ 16, 57. This energy data can be any type of data associated with building management, including inside temperature. *See id.*

- **[1d]:** As EcoFactor did not contest, Rhee discloses a temperature sensor outside the building that sends data over a network, such as the internet, to the wireless controller. *See, e.g.*, Trial Tr. 1221:2-1222:10, 1223:11-14 (Mr. Williams): DTX-0224 at ¶¶ 79, 112.

- **[1e]:** As EcoFactor did not contest, Rhee teaches that the wireless controller receives an energy profile that contains a first temperature setpoint for when the building is occupied and a second temperature setpoint for when the building is unoccupied. *See, e.g.*, Trial Tr. 1222:11-1223:7, 1223:16-1224:5 (Mr. Williams); DTX-0224 at ¶ 48, Table 2.

- **[1f]:** As EcoFactor did not contest, Rhee discloses this limitation. Rhee also discloses that the wireless controller is configured to receive instructions for remote control of the system. *See, e.g.*, Trial Tr. 1224:8-1225:13 (Mr. Williams); DTX-0224 at ¶¶ 56, 113.

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- **[1g]:** As EcoFactor did not contest, Rhee discloses that information may be transmitted over a network, including the internet, and further discloses that the data may be raw user data used by the management server to generate user-specific information, such as summaries or charts. *See, e.g.*, Trial Tr. 1225:14-1228:9 (Mr. Williams); DTX-0224 at ¶¶ 48, 56, 112. The user-specific data may be obtained through a transmitting device, such as a cellphone, personal digital assistant, laptop computer, or email device. *See, e.g.*, Trial Tr. 1227:25-1228:6; DTX-0224 at ¶¶ 56, 113.

- **[1h]:** Rhee discloses the use of sensors (including motion sensors) by the energy management system to make an occupancy determination. *See, e.g.*, Trial Tr. 1228:10-1230:9 (Mr. Williams); DTX-0224 at ¶¶ 52, 83, Tables 2 and 8.

- **[1i]:** As EcoFactor did not contest, Rhee discloses a wireless controller (the claimed "first processor") connected to the storage module on the management server (the claimed "memory") through a network. *See, e.g.*, Trial Tr. 1230:10-1231:7 (Mr. Williams); DTX-0224 at ¶ 60, Fig. 2. The wireless nature of the wireless controller confirms that it is remote from the management server. *See id.*

- **[1j]:** As EcoFactor did not contest, Rhee discloses that the wireless controller communicates with the management server (which contains the claimed "memory"). *See, e.g.*, Trial Tr. 1231:8-21 (Mr. Williams); DTX-0224 at ¶ 60.

- **[1k]:** As EcoFactor did not contest, Rhee discloses that the memory of the management server is configured to receive energy data, including environmental data like temperatures. *See, e.g.*, Trial Tr. 1231:22-1232:25 (Mr. Williams); DTX-0224 at ¶¶ 57, 70.

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- **[2]:** Rhee discloses temperature setpoints corresponding to the desired temperature setting when the building is occupied. *See, e.g.*, Trial Tr. 1233:19-1235:6 (Mr. Williams); DTX-0224 at ¶ 48, Table 8, Table 2.

- **[12]:** Rhee's wireless controller includes one or more processors that determine occupancy. *See, e.g.*, Trial Tr. 1235:7-1236:15 (Mr. Williams); DTX-0224 at ¶¶ 48, 52, 83, Table 2, Table 8.

In view of the above, Google presented clear and convincing evidence that Rhee anticipates claims 2 and 12 of the '382.

2.   EcoFactor did not meaningfully contest the presence of these elements.

As with its halfhearted rebuttal to the invalidity of the '327, EcoFactor spent only three minutes in its direct examination of its expert, Dr. Palmer, in response to Mr. Williams's testimony on Rhee. *See* Trial Tr. 1309:19-1311:14 (Dr. Palmer). In this limited time, Dr. Palmer only challenged Mr. Williams's opinions about the limitations relating to Tables 2 and 8 in Rhee, including '382 claim limitation 1[h] and claims 2 and 12. For claims 2 and 12, Dr. Palmer did not contest that Rhee's system made an occupancy determination, but denied that Rhee disclosed any algorithm for how such a determination is made, something not required by the '382 claim language. *See* Trial Tr. 1310:4-10, 1311:8-14; JX-0003 at 9:1-6, 4-42. This *ipse dixit* offered by Dr. Palmer lacked supporting evidence on which the jury could reasonably rely to rebut Mr. Williams' testimony. In sum, the jury's finding that claims 2 and 12 are not invalid is not supported by substantial evidence. JMOL is thus appropriate.

B.   Google presented unrebutted and clear and convincing evidence that claims 2 and 12 were invalid under Section 101.

Google also moved for summary judgment of invalidity of '382 claims 2 and 12 under Section 101, which the Court denied at the pretrial conference, sending the second step of *Alice*

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to the jury. *See* ECF 111; Pretrial Tr., 31:17-19. The Court should set aside the jury's finding that the elements of claims 2 and 12, when taken individually and as an ordered combination, are not well-understood, routine, and conventional.

1.   As shown in Google's motion for summary judgment, the claims of the '382 patent are directed to an abstract idea.

For the reasons stated in Google's motion, under *Alice* step 1, the Court should conclude that claims 2 and 12 of the '382 are directed to the abstract idea of changing the temperature setpoint on a thermostat based on whether a building is occupied. *See* ECF 111 at 17-19. When stripped of extraneous language, independent claim 1 (from which claims 2 and 12 depend) recites the following sequence of functions: (a) receive "first data" including a measured characteristic of the building; (b) receive "second data" from outside the building; (c) store historical values of the first and second data; (d) receive non-occupancy and occupancy temperature setpoints; (e) receive user commands for HVAC temperature setpoints; (f) send user-specific data about the building and HVAC system; and (g) control the HVAC system based on whether the building is occupied. *See* JX-0003 at 8:12-67. Dependent claims 2 and 12 add nothing substantive to the above idea, with claim 2 describing setting a different temperature setpoint if the building is occupied; and claim 12 describing a processor determining whether a building is occupied or unoccupied. *See id.* 9:1-6, 9:40-42.

These claims are directed to the same core, abstract idea of changing the temperature setpoint of a building based on a determination of occupancy in which "computers are invoked merely as a tool." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016). The '382 itself, one of its named inventors, and Mr. Williams all demonstrated the conventional nature of the components and functions in claims 2 and 12. The patent describes conventional mechanical and electronic componentry such as an HVAC system, memory, processors with

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circuitry and code, sensors, and a network. *See, e.g.*, JX-0003 at 4:38-5:25. Mr. Hublou

confirmed that the named inventors intended for conventional componentry to be used without

improvement. Trial Tr. 254:8-20 (invention intended to be "hardware agnostic"), 255:5-10 (in

testing, inventors used thermostat already made by Prolifics). And Mr. Williams confirmed that

programmable thermostats, occupancy sensors, remote servers, and user devices were all

conventional and well-known at the time of the purported invention. *See* Trial Tr. 1238:20-

1239:16 (quoting from '382's disclosure of computers, servers, and air-conditioners that are

"conventional" and off-the-shelf), 1239:17-1240:4 (testifying that the patent acknowledges

motion sensors connected to HVAC systems were already in use to determine occupancy).

Nor did Dr. Palmer meaningfully contest the conventionality of claims 2 and 12. As with

his testimony on the '327, Dr. Palmer's testimony consisted of threadbare conclusions purporting

to contradict Mr. Williams's opinions with no explanation why Dr. Palmer believed the claimed

components, either individually or in combination, were not conventional. *See* Trial Tr. 1314:16-

24. The only testimony Dr. Palmer provided was to parrot Mr. Hublou's testimony that a

"wireless connected thermostat was not available at the time of the invention of the patent" and

that the inventor "met with a significant degree of skepticism" when he sought assistance

commercializing the patent's purported invention. *Id.* 1315:5-11. But as Mr. Hublou testified, a

wireless connected thermostat was not required to carry out the claims, and whether the

inventors could successfully commercialize their purported invention is a separate question from

whether the purported invention consisted of conventional components arranged in a

conventional way. *See* Trial Tr. 255:5-10 (inventors used Prolifics' thermostat for testing).

2.   The jury's finding that claims 2 and 12 were not well-understood,

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routine, and conventional is not supported by substantial evidence.

As for *Alice* step two, EcoFactor did not dispute that the hardware components recited by '382 claims 2 and 12 were well-known at the time of the purported invention. *See* section V.B.1 *supra*. The claims also use these components in a conventional way, merely to "extract [] data," according to Mr. Hublou. Trial Tr. 255:5-10. The claims' "wholly generic computer implementation," *Alice*, 573 U.S. at 223, does not supply the inventive concept necessary to pass muster under *Alice* step two. Nothing in the claims defines any technical improvement upon existing HVAC systems, memory, processors, sensors, or networks. And, as with the '327, the '382 specification and the trial testimony confirmed that the named inventors contemplated nothing beyond the conventional. *See, e.g.*, JX-0003 at 4:45-5:58; Trial Tr. 1238:20-1240:25 (Mr. Williams); 254:8-20 (Mr. Hublou).

Neither the claims nor specification of the '382 offer more than "generic functional language to achieve the[] purported solutions." *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017). With no improvement on existing hardware on which the claimed inventions are implemented, the inquiry under *Alice* step two "therefore must turn to any requirements for *how* the desired result is achieved." *Id.* Because there is nothing in the claims that "requires anything other than conventional computer and network components operating according to their ordinary functions," the claims of the '382 do not contain an inventive concept and therefore fail *Alice* step two. *Id.*

The Court should accordingly enter JMOL of invalidity of claims 2 and 12 of the '382 under Section 101 and/or 102.

VI.   **CONCLUSION**

For these reasons, Google requests that the Court enter judgment as a matter of law of no infringement for claim 5 of the '327 and invalidity for the asserted claims of the '327 and '382.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who have consented to electronic service are being served with a copy of this document via electronic mail on June 23, 2022.

I also hereby certify that all counsel of record who have consented to electronic service are being served with a notice of filing of this document, under seal, pursuant to L.R. CV-5(a)(7) on June 23, 2022.

/s/ Michael E. Jones

CERTIFICATE OF AUTHORIZATION TO FILE UNDER SEAL

I certify that the foregoing document is authorized to be filed under seal pursuant to the Protective Order in this case and Judge Albright's Amended Standing Order Regarding Filing Documents Under Seal in patent Cases and Redacted Pleadings.

/s/ Michael E. Jones